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J. T. BENT. *The ruined cities of Mashonaland, being a record of excavation and exploration in 1891*, by J. THEODORE BENT, etc.; with a chapter on the *Orientation and Mensuration of the Temples*, by R. M. W. SWAN. 8vo., pp. xi, 376. London, 1892, Longmans, Green & Co.

Mr. Bent is one of the most energetic of the travellers and explorers of this generation. His researches among the Greek islands and on the Bahrein group off Arabia had already placed him in the front rank, and recently, in his expeditions to the region of the ancient gold mines of Mashonaland, in South Africa, and in his more recent expedition into Abyssinia, he has scored two distinct successes. Elsewhere in the *News* of this JOURNAL (vol. VII, p. 491, VIII, p. 254), accounts have been already given of the results of his investigations and their historic and archæological bearings. The present volume is divided into three parts: Pt. I, *On the road to the ruins*, being an account of the journey up from Vryberg through Bechuanaland by the Kalahari desert route, then of the first impressions of Mashonaland, and, finally, of the camp life and work at Zimbabwe. The archæological part of the work is reached in Part II, which is *devoted to the archæology of the ruined cities*.

"The ruins of the Great Zimbabwe (which name I have applied to them to distinguish them from the numerous minor Zimbabwes scattered over the country) are situated in south latitude $20^{\circ}, 16', 30''$, and east longitude $31^{\circ}, 10', 10''$, on the high plateau of Mashonaland, 3,300 feet above the sea level, and form the capital of a long series of such ruins stretching up the whole length of the western side of the Sabi river. They are built on granite, and of granite, quartz reefs being found at a distance of a few miles. The prominent features of the Great Zimbabwe ruins, which cover a large area of ground, are, firstly, the large circular ruin with its round tower on the edge of a gentle slope on the plain below; secondly, the mass of ruins in the valley immediately beneath this; and thirdly, the intricate fortress on the granite hill above, acting as the acropolis of the ancient city."

The circular ruin has an elliptical shape, with a greatest length of 280 ft., a wall at its highest point of 35 ft., and with a greatest base thickness of 16 ft. The wall is constructed of small stones a little larger than bricks, laid without cement or mortar, in perfectly true courses. The S. E. portion of the outer wall is decorated with a pattern in low relief coinciding with the position and limits of the sacred enclosure inside, and the top of the same section of the wall was made into a promenade, paved with slabs of granite and decorated with large monoliths. The interior is a perfect labyrinth. A stupendous

narrow passage leads from the main entrance to the sacred enclosure, on either side of which rise the great walls, thirty feet high, "built with such evenness of courses and symmetry that, as a specimen of the dry builder's art, it is without a parallel." Buttresses and portcullises defended the entrances and passageways at every point. Within the sacred enclosure stood two round towers of conical shape, but unequal height, the larger being 35 ft. high. Such towers, or colossal cones, are known to have been erected by the Phoenicians within their temple precincts: examples can be cited in Phoenicia, Malta, Sardinia, *etc.* No cemetery was found in connection with Zimbabwe, and Mr. Bent's conclusion was "that the ancient inhabitants, who formed but a garrison in this country, were in the habit of removing their dead to some safer place. This plan seems to have a parallel in Arabia in antiquity, a notable example of which is to be found in the Bahrein Islands, in the Persian Gulf, where acres and acres of mounds contain thousands of tombs, and no vestige of a town is to be found anywhere near them."

The fortress is even more remarkable. Its wall is thirty feet high in parts, and the flat causeway on the top was decorated on the outside edge by a succession of small round towers alternating with tall monoliths. "The labyrinthine nature of the buildings . . . baffles description." Every imaginable precaution against attack was taken in the way of buttresses, tortuous and narrow passages and traverses. There was a temple at the S. W. end, containing an altar, around which were found phalli, birds on soapstone pillars and fragments of soapstone bowls. Gigantic granite boulders, some over fifty feet high, are strewn over the summit. Mr. Bent closes his description with these interesting sentences: "Such is the great fortress of Zimbabwe, the most mysterious and complex structure that it has ever been my fate to look upon. Vainly one tries to realize what it must have been like in the days before ruin fell upon it, with its tortuous and well-guarded approaches, its walls bristling with monoliths and round towers, its temple decorated with tall, weird-looking birds, its huge decorated bowls, and in the innermost recesses its busy gold-producing furnace."

The ruin of the great circular building at Matindela is second only in importance to the Great Zimbabwe. All the other ruins visited by Mr. Bent, or reported to him, are far inferior and do not merit the same attention.

The large number of similar ruins, in each case found near gold workings, proves that an extensive population once lived here as a garrison in a hostile country for the sake of the gold which they extracted from the mines in the quartz reefs between the Zambesi and

Limpopo rivers. All were built by the same race and belong to the same period. The ruins are circular or elliptical in shape, and an interesting feature in nearly all of them is the ornamental pattern encircling only a portion of the outer wall—facing the southeast. It is probable that this fact had a religious significance and was connected with solar worship. The buildings served both as temple and as fortress.

The chapter by Mr. Swan, *On the Orientation and Measurements of Zimbabwe Ruins*, is an attempt to prove that at Zimbabwe, in connection with the worship of the sun and the reproductive power, several methods were employed for observing the motions of the heavenly bodies, in order to use this knowledge in regulating the celebration of religious festivals and the ordinary affairs of life. According to Mr. Swan, the structure, orientation and various openings of the Zimbabwe structures were made to subserve this purpose. His principal measurements are for the purpose of calculating the radius of the arc of different sections of the walls, and in order to ascertain how the rays of the rising sun would penetrate into the interior at the summer solstice. There does not seem to be a sure enough basis of facts for the conclusions drawn in this chapter, nor do the other ruins of the country furnish strictly concordant data.

The following chapter is on *The Finds at the Great Zimbabwe Ruins*. Of these the most remarkable are the hawks or vultures perched upon tall columns, of soapstone. These birds, found around the altar, were, according to Mr. Bent, sacred to Astarte. In connection with these were found: phalli, some of them decorated; decorated soapstone beams, with a geometric ornamentation like that on early Cypriote pottery; fragments of large soapstone bowls, some of which have frieze-like scenes in relief, processions of animals, hunting-scenes, religious processions, geometric patterns, *etc.* Close underneath the temple in the fortress stood the gold-smelting furnace, made of very hard cement, of powdered granite, with a chimney of the same material, and with neatly bevelled edges. Near it were many little crucibles, of a composition of clay, which had been used for smelting the gold, usually with specks of gold still adhering to the glaze. There were also water-worn stones used as burnishers, an ingot mould of soapstone corresponding almost exactly to a Phœnician ingot of tin found in Falmouth Harbor.

Chapter VII deals with *The Geography and Ethnology of the Mashonaland Ruins*, and gives a sketchy account of the past knowledge of this region down to the time of Mr. Bent's visit.

The third and last part of the book treats of *Exploration Journeys in Mashonaland*, which refer only incidentally to archæological matters.

Mr. Bent here throws some light upon the Monomatapa Empire which flourished in this region several hundred years ago.

At present Fort Salisbury is the centre of a new English enterprise and is the future capital of the Mashonaland gold fields *redivivi*.

A. L. F., JR.

F. J. BLISS. *A mound of many cities, or Tell el Hesi excavated*, by FREDERICK JONES BLISS. 8vo., pp. XII, 197. New York, Macmillan & Co., 1894. Price, \$2.25.

The task of excavating the mound of Tell el Hesi, in Palestine, 16 miles E. of Gaza, and 23 miles W. of Hebron, was commenced by Mr. Flinders Petrie in April, 1890. In his "reconnaissance of six weeks, during which he examined the tell merely at its sides, he was able to reconstruct its past history from the apparently unimportant remains he found, and to reach conclusions which my (Mr. Bliss') detailed examinations through four seasons . . . merely modified, but did not materially alter." Mr. Petrie has reported on his own work in his publication, "*Tell el Hesi*" (*Lachish*), published in 1891, for the Palestine Exploration Fund. During 1891, 1892 and 1893, Mr. Bliss carried forward the work on a quite different scale, cutting down one-third of the mound, layer by layer. He agrees with Petrie and Conder in identifying the site with the city of Lachish: in fact, it was through his discovery of the cuneiform tablet with the letter containing the name of Zimridi, governor of Lachish, that the strongest argument in favor of the identification was secured.

Mr. Bliss' conclusions are that some 2000 B. C. the Amorites built a town on this bluff, some 60 ft. above the stream-bed of the Wady el Hesi, and on the ruins of this city their successors built another and then another, until about 400 B. C., when the site seems to have been abandoned, the ruins of the last inhabitants being 60 ft. above the ruins of the first builders, with a series of six intermediate towns, each represented by a separate layer: in all eight layers. The dates assigned by Mr. Bliss to the various towns are the following: City Sub I, 1700 + B. C.; City I, c. 1600 B. C.; City Sub II, c. 1550 B. C.; City II, c. 1500; City III, c. 1450; City Sub IV, c. 1400; City IV, c. 1300-1000; City V, c. 1000; City VI, c. 800; Cities VII, VIII, c. 500 and 400 respectively. The earliest three or four settlements were evidently the largest and most important, the later settlements being confined to the small area of the tell, a good part of which, however, has been anciently undermined and carried away by the stream. Bliss' main excavation area was 160 ft. N.-S. and 125 ft. W.-E. The most inter-